Test Report

Rate of Spread of Tack Coat

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/02
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Location	At Site
Material	Bitumen
Sample No	1
Date	19-Jun-2018

Sl. No.	Determination	Unit	Test No 1 Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.653	1.652	1.653
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.012	0.011	0.012
6	Rate of spread (d/a)	kg / m^2	0.300	0.275	0.300
7	Average	kg / m^2	0.292		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.292 kg / m2

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

ii. The results relate only to the items tested.

iii. This test report should not be reproduced except in full, without written approval of this laboratory.

iv. Any query regarding the report must be reported immediately.

For Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Rate of Spread of Tack Coat

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/02
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Location	At Site
Material	Bitumen
Sample No	2
Date	19-Jun-2018

Sl. No.	Determination	Unit	Test No 1 Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.652	1.651	1.652
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.011	0.01	0.011
6	Rate of spread (d/a)	kg / m^2	0.275	0.25	0.275
7	Average	kg / m^2	0.267		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.267 kg / m2

Note:

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For Mecadez Core Technologies Private Limited

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Rate of Spread of Tack Coat

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/02
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Location	At Site
Material	Bitumen
Sample No	3
Date	19-Jun-2018

Sl. No.	Determination	Unit	Test No 1 Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.652	1.652	1.653
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.011	0.011	0.012
6	Rate of spread (d/a)	kg / m^2	0.275	0.275	0.3
7	Average	kg / m^2	0.300		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.300 kg / m2

Note:

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Aggregate Impact Value

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/02
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	IS : 2386 (Part - 4) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	At Site
Material	Coarse Aggregate
Sample No	1
Date	17-Jun-2018

Sl. No.	Determination	Unit	Trails	
1	Weight of empty cylinder, w1	gm	960	960
2	Weight of container filled with Aggregate, w2	gm	1308	1305
3	Weight of the Aggregate before compaction, (w2 - w1) = w3	gm	348	345
4	Weight of the sample passing through 2.36 mm IS sieves after Impact, w4	gm	78	80
5	Weight of the sample retained on 2.36 mm IS sieve after Impact, w5	gm	270	265
6	Aggregate Impact Value (w4 / w3)x100	%	22.41	23.19
7	Specified Limit	%	27	

Results: Average Aggregate Impact Value: **22.80** %

Note:

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For Mecadez Core Technologies Private Limited

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Aggregate Particle Shape

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/02
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Hot Mix Plant
Material	Coarse Aggregates
Sample No	1
Date	17-Jun-2018

I.S. Sieves Size		Weight of Retained Sample on Each Sieve (minimum 200 Pieces) (gm)	Flakiness Index		Elongation Index	
Passing through IS Sieves (mm)	Retained on IS Sieves (mm)		Thickness Gauge	Weight of Aggregates in each fraction passing on thickness	Length Gauge	Weight of Aggregates in Fraction retained on length gauges (gm)
63	50	0	33.9	0	-	0
50	40	0	27	0	81	0
40	25	0	19.5	0	58.5	0
31.5	25	0	16.9	0	-	0
25	20	1568	13.5	248	40.5	266
20	16	1430	10.8	109	32.4	136
16	12.5	966	8.55	161	25.6	168
12.5	10	483	6.75	85	20.2	91
10	6.3	247	4.89	69	14.7	76
	SW	4694	SWf	672	SWe	737

Flakiness Index 14.32 %
Elongation Index 15.70 %
Combined Flakiness and Elongation Indices : 30.02 %
Comments: Maximum allowable Combined Flakiness and Elongation Indices for DBM is 35%.

Note:

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For Mecadez Core Technologies Private Limited
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Asst. Executive Engineer
Project Division
Yelahanka Zone

Test Report

Aggregate Stripping Value

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/02
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	IS : 6241 - 1971 & Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Hot Mix Plant
Material	Coarse Aggregates / Bitumen
Sample No	1
Date	15-Jun-2018
Type of Aggregate	Coarse Aggregate
Type of Binder	60 / 70 Grade
Percentage of Binder Used	5% by weight
Total weight of Aggregate	200 gms
Total weight of Binder	10 gms
Temperature of water bath	40^0C

Observation Number	Stripping Percentage	Average Percentage	Average Retained Coating (%)
1	3.00	3.1	96.9
2	3.10		
3	3.20		

Comments: Minimum allowable Aggregate Stripping Value for Dense Bituminous Macadam is 95%

Note:

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For Mecadez Core Technologies Private Limited

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report

Specific Gravity and Water Absorption

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/02
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	IS: 2386 (Part - 111) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Hot Mix Plant
Material	Coarse Aggregates
Sample No	1
Date	15-Jun-2018

Sl. No.	Particulars	Computations	Test Numbers		Mean
			Test 1	Test 2	
1	Weight of Empty Basket Immersed in Water	W_1 g	765	765	
2	water	W_2g	2040	2050	
3	Weight of Saturated Aggregate in water	W_sg = W_2-W_1	1275	1285	
4	Weight of saturated surface dry aggregate in Air	W_3 g	2075	2075	
5	Aggregate	W_3- W_s	800	790	
6	Weight of Oven dried Aggregate	W_4g	2036	2046	
7	Specific Gravity	W_4/(W_3-W_s)	2.55	2.59	2.57
8	Apparent Specific Gravity	W_4/(W_4-W_s)	2.68	2.69	2.68
9	Water Absorption	(W_4- W_3)*100/ W_4	1.92	1.42	1.67

Comments: Maximum allowable Aggregate Water Absorption value for Dense bituminous Macadam is 2.0%.

Note:

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Aggregate Gradation

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/02
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Hot Mix Plant
Material	Coarse Aggregates
Sample No	1
Date	20-Jun-2018

Weight of Sample: 4000 gms

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	37.5	0	0.00	0.00	100.00	100	Gradation satisfies the MORT&H Specification for Dense graded biyuminous macadam
2	26.5	183	4.58	4.58	95.43	90-100	
3	19	861	21.53	26.10	73.90	71-95	
4	13.2	663	16.58	42.68	57.33	56-80	
5	4.75	658	16.45	59.13	40.88	38-54	
6	2.36	367	9.18	68.30	31.70	28-42	
7	0.3	743	18.58	86.88	13.13	(7-21)	
8	0.075	261	6.53	93.40	6.60	(2-8)	

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Stability of Mix

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/02
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Bay
Sample No	1
Date	19-Jun-2018

Sl. No.	Description	Unit	Test 1	Requirements as per MORT&H
1	Marshal Stability	KN	9.70	9 KN (min)
2	Marshal Flow	mm	3.50	2 – 5 mm
3	Percent of Air Voids in mix	%	4.60	3-5..
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	71.00	65 – 75 %
5	Density	g/cc	2.22	2.22 g/cc

Note:

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Stability of Mix

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/02
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Bay
Sample No	2
Date	19-Jun-2018

Sl. No.	Description	Unit	Test 1	Requirements as per MORT&H
1	Marshal Stability	KN	9.65	9 KN (min)
2	Marshal Flow	mm	3.70	2 – 5 mm
3	Percent of Air Voids in mix	%	4.70	3-5
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	72.00	65 – 75 %
5	Density	g/cc	2.23	2.22 g/cc

Note:

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Asst. Executive Engineer
Project
Yelahanka
Bangalore